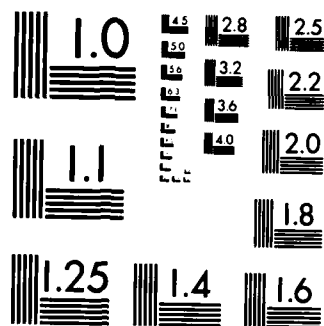


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THE RELATIONSHIP BETWEEN
PERFORMANCE AND SATISFACTION:
A UTILITY ANALYSIS

Gareth R. Jones

and

Cynthia D. Fisher

March, 1985

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Thus satisfaction and performance may be negatively related for high to very high levels of performance. Implications for encouraging and maintaining performance at the margin are presented.

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In the long and controversial history of research into the relationship between job performance and job satisfaction, three issues have frequently been discussed. The first concerns the magnitude of the relationship between performance and satisfaction, normally measured as a correlation, and normally found to be fairly modest (Vroom, 1964; Greene, 1972). The second is the issue of causality, does job satisfaction cause job performance, or vice versa (Porter & Lawler, 1968; Organ, 1977; Schwab & Cummings, 1970;)? The third is the nature of additional variables which may intervene or moderate the direction or magnitude of the relationship between performance and satisfaction, such as organizational level, reward systems, or personal characteristics (c.f. Cherrington, Reitz, & Scott, 1971; Gould & Hawkins, 1978; Inkson, 1978; Slocum, 1971; Steers, 1975).

A fourth issue which has rarely been explicitly addressed and which is fundamental to understanding the performance-satisfaction relationship is the shape or functional form of the relationship between performance and satisfaction. In previous research using correlational analysis, the implicit view seems to have been that the relationship, when it is nonzero, is monotonic or linear. However, the rationale behind this view has not been explicated, and consequently the possibility of a non-linear relationship has only rarely been examined. Triandis (1959), for example, proposed a complex curvilinear relationship between satisfaction and performance under varying levels of pressure to perform. Cherrington et al. (1971) demonstrated that performance and satisfaction can be either negatively or positively related depending on reward contingencies. Nevertheless, the positive, monotonic view has prevailed. The purpose of this paper is to address this issue.

Using utility analysis from economic theory, it will be argued that the performance-satisfaction relationship curvilinear, specifically an inverted 'U'

shaped function. It will also be argued that at different levels of performance, different factors affect the amount of satisfaction derived from work and hence the direction and magnitude of the performance-satisfaction relationship. In the discussion below, we will briefly review present thought on the satisfaction-performance relationship, and then turn to an explanation for the proposed curvilinear relationship. The latter is organized around three phases of the relationship based on the slope of the marginal utility curve of performance. Finally, implications of this new approach will be discussed.

The Relationship between Performance and Satisfaction

Since the consistent finding in several reviews of the literature that the median correlation between performance and satisfaction is small but positive (Greene, 1972; Vroom, 1964), considerable research effort has been devoted to explaining this finding. A consensus seems to have emerged that a third variable, reward contingency, is an important mediator of the relationship. Specifically, equitable rewards cause satisfaction, while performance contributes to intrinsic rewards and may or may not cause extrinsic rewards (Cherrington et al. 1971; Lawler & Porter, 1967). Thus, the reason that the performance-satisfaction relationship is often weak is because of the difficulty firms have in tying extrinsic rewards to performance (Lawler, 1971; 1973), and because even performance contingent rewards (such as merit pay) may not be perceived as equitable by recipients, who often tend to overrate their own performance (Parker, Taylor, Barrett, & Martens, 1959; Porter & Lawler, 1968). On the other hand, intrinsic rewards, since they are self-conveyed, are more likely to flow directly from good performance and hence to increased satisfaction (Lawler & Porter, 1967). In this paper, we will take the stance

that (1) intrinsic and extrinsic rewards are important, though not sole, determinants of satisfaction, and (2) effort toward performance is caused by the anticipation of receiving valent, performance-contingent rewards (Naylor, Pritchard and Ilgen, 1980; Vroom, 1964) and by pressure from both personal values and organizational control systems. Performance follows from effort, though ability and situational factors may intervene.

Since rewards are usually thought to play a key role in the satisfaction-performance relationship, let us consider the ways in which rewards can be tied to performance. (The way rewards are translated into satisfaction will be discussed later.) First of all, non-contingent rewards can be given in the same amount to all, regardless of performance. Straight hourly pay, seniority based raises, and most benefits fall into this category, as do most job context "rewards" such as pleasant coworkers, good working conditions, geographic location, etc.. Second, merit systems are somewhat contingent since they attempt to link pay with total performance as evaluated once or twice per year, but they are seldom completely successful in doing so fairly. Third, sometimes rewards are directly contingent on performance throughout the entire range of performance. This relationship holds for commissions, straight piece rates, and possibly intrinsic rewards and recognition. Finally, some systems have both contingent and non-contingent features, such as a base salary plus commission, or guaranteed wage plus incentive for work above standard.

According to the linear school of thought, the direction and magnitude of the relationship between satisfaction and performance can be predicted with near certainty from information on reward contingency (Cherrington et al. 1971). As a result, the question of how or at what rate satisfaction increases as performance increases is assumed away since this primarily depends on the linking of the reward structure with performance. While we believe that

rewards are important, we will show that the satisfaction-performance relationship is curvilinear, given the entire range of performance, regardless of reward system. Reward systems may change the steepness of the slopes of different parts of the satisfaction-performance curve, and push the asymptote right or left, but should not change the basic fact of curvilinearity.

Satisfaction, Utility, and Performance

Following Locke (1976), we will define overall job satisfaction as an affective response to a job or work situation, which is based partly on the extent to which the job and the rewards it provides are evaluated as fulfilling one's expectations, needs, and values. One is relatively more satisfied, the closer the job comes to fulfilling one's important needs. Most of our measures of job satisfaction are rooted in this deficiency framework. Explicit examples include the Porter Need Deficiency Questionnaire (Porter, 1961) and the Minnesota Satisfaction Questionnaire (Weiss, Davis, England, & Lofquist, 1967). Implicitly, the Job Descriptive Index (Smith, Kendall, & Hulin, 1969) assumes widely shared needs or desires for certain job attributes (e.g. "pleasant," "creative," or "challenging," work; "stimulating," "intelligent," or "loyal," coworkers).

Given a need, or a relatively fixed value or level of desire, satiation becomes a possibility. Receiving more from one's job than one wants or needs may not produce any additional satisfaction. In addition, receiving as much or more than one desires (satiation) may result in a reduced level of motivation toward subsequent job performance, because of a reduction in the valence of the rewards that may have provided the motivation to perform previously (Lawler, 1973).

Economists have conceptualized the idea of satiation in a more sophisticated manner, called utility theory. This theory states that people

consume goods and services because their needs or preferences are served by doing so: they derive satisfaction from consumption. Utility is simply a subjective measure of the usefulness or need satisfaction that results from consumption (Browning & Browning, 1983; Hershleifer, 1976). Thus, utility and satisfaction are synonymous in our analysis. However, in utility theory the important consideration is the rate at which utility changes per unit of consumption as the point of satiation is approached and passed, and here a distinction is made between total utility and marginal utility. Marginal utility is the satisfaction associated with consuming the last unit of a good. The well-known law of diminishing marginal utility states that as more of a good is consumed, the marginal utility associated with the consumption of additional units tends to decline. For example, suppose one is purchasing shoes. The utility of having one pair of shoes as opposed to none is quite great. The marginal utility of acquiring a second pair is slightly less, and for the third pair is still less. Eventually, the utility of another pair of shoes may be zero, or even negative (as one's "shoe need" is fully met, one runs out of storage space, and the purchase of shoes detracts from one's ability to acquire other desired goods). Total utility is the sum of all previous marginal utilities. Thus, the total utility of having six pairs of shoes is the marginal utility of the first pair, plus the marginal utility of the second pair, plus ... the marginal utility of the sixth pair. Note that total utility increases at a diminishing rate as consumption increases, and even begins to decline when marginal utility is negative.

One of the goods or services that people consume is the rewards which they receive in connection with working on a job. In general, we would expect that as the number of units of work effort expended increases from zero, utility will also increase since otherwise people would not choose to work in

the first place. Applying utility ideas to the performance-satisfaction relationship produces the following definitions and predictions. Total utility is the total satisfaction one receives from possessing and consuming all the rewards earned by performing up to and including the present performance level (see Figure 1). Marginal utility is the additional amount of satisfaction associated with the rewards flowing from the last unit of performance. The law of diminishing marginal utility suggests a curvilinear relationship between rewards and satisfaction. The expanded view we will present below gives additional reasons why such a relationship can be expected, not just between rewards and satisfaction, but also between performance and satisfaction. The utility curves in Figure 1 have three phases, indicating hypothesized different functional relationships between performance and satisfaction. Specifically, we make the following three propositions:

- Proposition One: From a performance level of zero up to a moderate level, performance and total satisfaction will be fairly strongly and positively related.
- Proposition Two: From a moderate to a fairly high level of performance, performance and total satisfaction will be related weakly but positively.
- Proposition Three: For high to extremely high levels of performance, total satisfaction will tend to decline slightly as performance increases.

 Insert Figure one about here

The rationale for each of these propositions, or phases of the satisfaction-performance relationship, will be discussed in turn below.

Phases of the Performance-Satisfaction Relationship

Phase One.

Phase one represents a positive marginal satisfaction phase where the individual receives increasing satisfaction from the expenditure of each

additional unit of effort and performance. This occurs for several reasons. First, at the extrinsic reward level, it may be hypothesized that the marginal satisfaction received from increased work income rises sharply as work performance increases from zero since some income is necessary to satisfy basic subsistence needs. This argument holds most clearly when rewards are directly and continuously tied to performance (e.g. satisfaction-performance correlation of .67 under a straight piece rate in Cherrington, et al. 1971), but can be extended to cases of non-contingent payment as well. This is because payments are hardly ever truly non-contingent since poor performers risk job loss and other sanctions. Thus, moving from zero performance to some minimal acceptable level should directly and rapidly increase satisfaction by reducing the threat of punishment. Beyond this point, performance may continue to return slowly increasing or constant marginal satisfaction until one's most pressing needs are met by the rewards associated with performance.

There are also intrinsic reward reasons for expecting satisfaction to increase sharply with performance in phase one. One reason is that zero performance is synonymous with inactivity or boredom, and several studies have demonstrated that individuals possess some desire for experimentation and optimal arousal (Berlyne, 1967; Scott, 1966). Further, if work is intrinsically interesting, and individuals are able to self-generate rewards from their performance then we may hypothesize that individuals will receive increasing or constant marginal satisfaction from increased performance, until they reach a point of mastery. If work is monotonous or boring and provides little intrinsic satisfaction after the initial "learning curve phase," phase one may be short lived and marginal satisfaction may decrease, as in phase two.

A third reason for expecting a strong positive satisfaction performance relationship in this phase revolves around the evaluated worth of work

outcomes compared to their alternative--leisure. It is assumed that the basic choice facing individuals is the choice between work activity or leisure, where leisure refers to all the activities and goods apart from work time, effort, and performance which might be consumed. Consequently, given a zero level of work performance, when all available time or energy is devoted to leisure, this lowers the marginal satisfaction derived from the last unit of leisure (given the diminishing marginal utility of leisure) and makes work performance more attractive. Since most individuals may be assumed to depend on the income earned by work performance, the consumption of a unit of work effort will be preferred to the consumption of the last unit of leisure. The rationale here is well expressed by Durant who writing during the depression of the 1930's argued that, "To have leisure alone, to have nothing but free time, means to have nothing, no contact, no friends, no money, no justification for existence and last but not least, to have no leisure" (1938, p. 30). Since leisure in large amounts has little value, while the first few units of work have a great relative value, there will be a strong positive relationship between performance and marginal and total satisfaction as performance rises from zero.

Phase Two.

This is the phase in which diminishing marginal utility or satisfaction impacts upon the performance-total satisfaction relationship. A declining but positive marginal utility phase means that total satisfaction increases but at a diminishing rate. Why does satisfaction increase at a diminishing rate as performance increases in phase two?

First, this may occur because individuals are satiated on extrinsic rewards, or because extrinsic rewards are difficult to tie directly to performance (Lawler, 1973). At the margin, the reward system does not provide the incentive for individuals to put forth the last unit of performance.

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Conclusion

The present analysis offers an alternative explanation for the widely varying relationships observed between satisfaction and performance, as well as an explanation for the modal finding of a weak but positive relationship. It has been argued that while reward contingencies affect the performance-satisfaction relationship, there is nevertheless an inherent curvilinear relationship between those variables which may be influenced, but not changed, by reward contingencies. In terms of future research, this analysis suggests the importance of distinguishing between total satisfaction and marginal satisfaction in attempting to 1) assess the relationship between satisfaction and performance, 2) assess the effect of reward contingencies on this relationship, and 3) predict motivation on the basis of rewards. This analysis also has implications for the design of reward systems, since motivating performance at the margin is more difficult and complex than linear assumptions would predict. Research into the effect of reward and control systems on employee performance should explicitly consider the costs and benefits of such strategies given diminishing marginal utility.

obtaining the last unit of performance may equal or exceed the benefits to be obtained by doing so. As noted earlier, the attempt to increase intrinsic or extrinsic rewards will be very costly since larger and larger rewards will be needed to elicit the last unit of performance. Forcing high performance by control and pressure, as in phase three, may be socially undesirable and eventually destructive. At the same time, it will increase the costs of supervision since additional supervisors will be needed to monitor output or control behavior.

Consequently, given the existence of diminishing marginal utility, organizations may be better advised to adopt alternative strategies. Firms should alter their structure or technology to influence employee productivity indirectly through the work context, rather than directly by associating rewards with performance. For example, one characteristic way in which firms have dealt with the problem of diminishing marginal utility is to hire an additional employee at the basic pay rate, rather than to pay employees an overtime premium in order to get the last few units of performance out of them. The costs of motivating individuals in phase one who have many unmet needs may well be less than the costs of additional incentives, overtime pay, and close supervision required to wring extra performance from individuals near the end of phase two. Similarly the process of the division of labor, and the use of automated technologies both shift control of performance from the individual to the organizational context.

and income effect as the price paid to labor increases (Browning & Browning, 1983). The effect of an increase in price paid is to substitute work for leisure, as performance at work becomes relatively more valuable. However, raising the wage rate also has the effect of raising the level of labor income and part of the increase in income is likely to be taken in the form of increased leisure (except when individuals are very poor). As a result, the consumption of both work and leisure will increase as extrinsic rewards increase, and thus performance will increase but not at the rate predicted by a pure reward (or substitution) effect. Additionally, leisure can itself be made a performance-contingent reward. This is already common practice in many firms where top salespeople earn trips to Hawaii, and in academia where productive faculty researchers are rewarded with trips to conferences.

On-the-job leisure is also an area where changes facilitative of performance can be made. Proponents of self-reinforcement suggest that individuals set challenging performance goals for themselves and use any desired form of on-the-job leisure (coffee break, lunch, chat with co-workers) as a reward after the performance goal is met (Brief and Aldag, 1981). By increasing contingent rewards, this should increase the satisfaction associated with good performance. An alternate strategy is to raise the cost of engaging in on-the-job leisure so that performance is seen as an attractive alternative.

To encourage less on-the-job leisure, the firm may increase the monitoring of employee behavior, thus effectively raising the prospect of being caught and punished for loafing. This strategy produces a phase three situation, and may be unproductive in the long run, if grievance or turnover rates increase.

In this connection, a further implication of this marginalist analysis concerns the utility of attempting to increase performance at the margin at all. This is because for each of the strategies discussed above, the costs of

satiation, varying forms of rewards can be offered, as in a cafeteria pay plan (Lawler, 1971). Such a plan allows individuals to take their rewards in whatever form has the most value (utility) to them, such as cash, vacation, and various insurance benefits. From a selection point of view, the firm should attempt to hire individuals with strong unmet needs and values which are consistent with the type of contingent reward being offered.

The second way of mitigating the onset of diminishing marginal satisfaction is by strengthening intrinsic reward contingencies if they are weak. Such a job enrichment process increases the performance range during which increasing, or at least constant marginal satisfaction prevails and thus increases the incentive to invest in the marginal unit of performance. As noted earlier however, there is no reason to believe a priori that intrinsic satisfaction will not also increase at a diminishing rate as satiation occurs. The implications of a utility analysis is that job design (task challenge, feedback, variety, etc.) will be most important in a phase two position when a diminishing return to performance has set in because extrinsic rewards have less valence, or because leisure has more valence at this point. Since at the margin, however, more than proportional rewards are required to elicit the last unit of performance, it is not surprising the studies have found that job design changes are seldom strongly related to performance (Umstot, Mitchell, & Bell, 1978).

Turning to leisure, the first method available to improve performance is to increase the costs of off-the-job leisure. Raising the hourly wage rate, for example, raises the relative cost of taking leisure and also compensates for the lower satisfaction received from performance at the margin. However, this process may fail to increase performance at the rate which might be expected. This is because of the relationship between the substitution effect

Reward Contingencies.

Given the discussion above, the main question which arises is whether individuals receive more or less satisfaction from their work when they put forth more effort. This will depend on their position on the performance-satisfaction curve, on the reward contingencies associated with that position, and on their evaluation of the worth of rewards received and foregone. As discussed earlier, the marginal satisfaction gained from each additional unit of performance will, at some point, fall as performance increases. This is because the extrinsic reward system may be loosely coupled to performance, the desires for both motivating job characteristics and intrinsic rewards may become satiated, and because the relative utility of leisure will increase as each additional unit of effort is devoted to work. At the margin then, the supply of effort devoted to work will depend on three factors: the extrinsic reward system, the availability and desirability of intrinsic rewards, and the demand for leisure.

Implications for Increasing Performance at the Margin

In order to encourage performance at the margin, firms may need to alter one or more of these three factors. First, the extrinsic reward system can be improved. "Caps" on rewards such as limits on the maximum merit raise, or limits on bonuses to a certain percent of salary, should be removed. Not only should rewards be closely tied to performance, but reward magnitude should increase at an increasing rate with increasing levels of performance. Increasing the percent commission or size of piece rate for successively higher performance levels is an example. However, as satiation occurs, given that greater and greater rewards will be needed to produce each additional unit of performance, this may be a high cost strategy. To postpone the onset of

The first implication of the analysis is that both the strength and direction of the relationship between performance and satisfaction will vary according to position on the curve. And, with the assumption that rational individuals will perform up to the point at which diminishing marginal returns set in, the most common relationship between performance and satisfaction is likely to be small but positive (the shape of the total satisfaction curve in phase two). This is what several reviews of the literature have found. Conversely, in phase one strong positive correlations are to be expected and in phase three negative correlations will be found.

Causality of the Relationship.

In general, the implication of a utility analysis is that the level of performance has an impact, via rewards, on the level of satisfaction. Job rewards are converted to satisfaction as a function of perceived equity, present level of unmet need or need satiation, and worth relative to rewards available from non-job activities. These variables change at different reward and performance levels, causing a change in how satisfying an additional unit of reward will be.

At the same time, performance is caused by the anticipated marginal satisfaction associated with the next unit of performance. Individuals will increase their effort and performance up to the point that marginal satisfaction becomes negative and total satisfaction begins to decline. This is consistent with the expectancy or "reward pull" model presented by Porter and Lawler (1968) and others, although this analysis does not support their implicit assumption that the rewards consequent on performance will have the same motivational effect at all levels of performance. That is, valences are usually assumed to be independent of performance or effort level, while we contend that they are not.

performance, performance may still increase. It is not clear a priori whether this is a true phase three phenomenon or whether anticipated future gains from present performance merely delay the onset of diminishing marginal satisfaction and hence extend phase two.

A phase three situation would also be found when employees have expectations that high performance will lead directly to negative outcomes. This would occur when on a piece rate system employees expect that higher performance will be accompanied by a reduction in the piece rate paid per item, an increase in the standard, and/or unemployment (Lawler, 1971). As a result, norms of output restriction would develop to mitigate the negative association of performance and satisfaction, and performance would stabilize in the phase two range.

These three phases in the performance-satisfaction relationship may be logically deduced from a utility analysis. In addition, the analysis suggests that phase two will be the most significant portion of the curve for research purposes, since rational individuals will perform up to the point at which diminishing marginal satisfaction sets in and will attempt to avoid a phase three situation. Thus, the phase two performance-satisfaction relationship will be the most relevant because this is the phase at which most individuals are likely to be making performance choices based on the expected marginal utility of additional units of work. Consequently, the discussion below will primarily focus on this segment of the curve.

Implications of the Analysis

We will begin by discussing the implications of this utility analysis for the three satisfaction-performance issues identified at the beginning of this paper: magnitude, causality, and reward systems.

The Magnitude of the Relationship.

Phase Three.

Phase three in the performance-satisfaction relationship begins when negative marginal satisfaction sets in, so that additional units of work effort or performance are associated with decreased total satisfaction. Thus performance and satisfaction become inversely related. Rational individuals will not usually choose to increase their performance when marginal satisfaction becomes negative (Naylor et al., 1980).

Examples of a phase three type relationship might be found in prisons or forced labor camps, where in essence individuals have no choice other than to perform. Triandis proposed in 1959 that satisfaction and performance would be negatively related under strong organizational pressure to perform. However, pressure need not come solely from an organizational source. A similar situation may be found in highly responsible and important positions where unavoidable job demands and personal values require great time and effort but yield no personal satisfaction, only feelings of role overload, alienation, and "burn out." Korman discusses this extensively in his book Career Success/Personal Failure (1980). Korman quotes from Watters (1976, p. 124):

"After you've sold widgets for twenty-five years, and are the best widget seller in the country, then the very thought of selling another widget is abhorrent. This causes a terrible questioning and is a shaking and shattering experience that goes through all your relationships, including family. Particularly if you are under heavy financial burdens. People tend to think of themselves as trapped in the position of producing large sums of money that get gobbled up by other people."

On the other hand, there are some situations where it may be rational for individuals to perform under conditions of negative marginal satisfaction. This would occur when individuals substitute short term dissatisfaction for the future anticipated benefits from present performance (delayed gratification). Thus even if the present reward structure does not reward

satiated with shoes or dollars. For instance, individuals low on growth need strength have been hypothesized to have low satiation thresholds for intrinsic rewards (Hackman & Oldham, 1980). However, it seems likely that even high GNS individuals could eventually get "too much of a good thing." Meyer, Folkes, and Weiner (1976) note that most people prefer tasks of intermediate difficulty since they are most diagnostic or informative about one's abilities. Thus, any job, no matter how enriched or interesting, will provide less intrinsic satisfaction as it becomes more familiar and performance increases with mastery.

The third explanation of diminishing marginal satisfaction in this phase is the evaluation of the work-leisure tradeoff. The rationale here is that as more and more units of time and effort are expended in work performance, the units available for leisure become proportionally scarce (given a fixed amount of time or energy) and therefore more valuable. Thus as work effort is substituted for leisure, the marginal utility of leisure will increase until, at some point, no increase in extrinsic or intrinsic rewards from work can compensate for the rising utility which is provided in leisure activity. Specifically, the marginal utilities of both goods change as the consumption of each change so that at some point the marginal utility of a unit of leisure will become greater than the marginal satisfaction from an additional unit of work.

Thus to summarize in phase two, the total satisfaction obtained through the effort--performance-reward process increases at a diminishing rate as first, the individual receives rewards on which he or she is increasingly satiated, second, inequity increases as greater inputs are required to earn an additional unit of rewards, and third, the utility of alternate activities increases due to scarcity.

global level described above, we would like to add a specific elaboration. For this comparison, the reference "other" is provided by the person's previous input/outcome ratio on the present job. Let us assume that it is rather easy, in terms of time and effort, to improve performance from zero to some moderate level. Further, the rewards associated with this improvement are substantial (job security, merit or piece rate pay, etc.) Given this base, assume the individual is assessing the equity of outcomes received for a further marginal increase in performance. To produce a small increment in performance (say from "very good" to "excellent") and to reap the few additional rewards that may be associated with this change probably requires a disproportionate amount of inputs. As performance nears the individual's ability limits, greater and greater time and effort is required to produce an additional increment in performance. The reward contingent on this increment is disproportionately small compared to the rewards given for earlier increments (from zero to moderate), and so may be perceived as inequitable. Thus, inequity may depress the marginal satisfaction associated with higher performance levels. In the absence of other pressures to continue performing at a very high level, the rational individual may choose to reduce inputs and hence performance to the level where outcomes are seen as being more in line with the time and effort required to produce them.

A second explanation for the downturn in marginal satisfaction is based on the value of intrinsic rewards. As noted earlier, there is a tendency in the literature to assume a more direct relationship between intrinsic rewards and satisfaction as performance increases since these rewards are conferred by the self. However, there seems to be no reason to believe that diminishing marginal satisfaction would not set in even in the case of intrinsic rewards. Individuals may be satiated with task variety or challenge just as they may be

Extreme merit may go unrecognized due to caps on maximum allowable raises. Perhaps the purest example of a reward system which does take into account diminishing marginal satisfaction is found in those piece-rate systems which provide for a higher rate paid on all pieces above the standard. To counter diminishing returns however, it follows that ideally, the reward for each additional unit produced should increase to preserve a constant relationship between performance and satisfaction. Such systems are rarely found however, except perhaps in the case of salespeople whose commission may increase exponentially as successive sales levels are met (e.g. 10 percent of first \$100,000 sales, 15 percent of next \$500,000, 20 percent of next \$1,000,000).

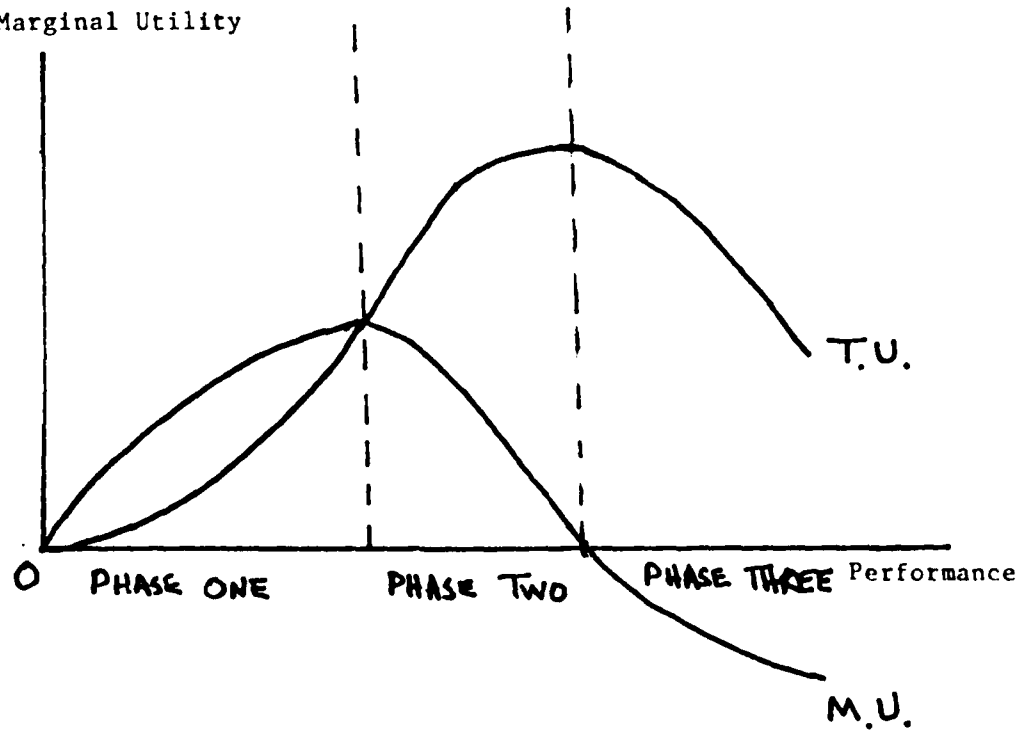
There has been research on the "marginal utility" of pay increases of various sizes, and on the size of a "just noticeable increase" in pay for individuals at varying levels of base pay. The findings of these studies have been inconsistent on some points. However, it does appear that the dollar amount of a pay increase needed to be noticeable and/or satisfying is much greater for those who make more money to begin with (Hinricks, 1969; Zedeck & Smith, 1968), indicating that the marginal utility of each additional dollar must be less for those who earn more. Furthermore, it is possible that needs for extrinsic rewards may become relatively satiated, (or increasingly taxed), such that additional units of the reward are less valued than were earlier units.

Equity also contributes to the satisfaction produced by rewards (Adams, 1965). The usual equity model states that individuals compare their total set of inputs (time, effort, ability) and outcomes (rewards) to those received by a comparison other. Balanced ratios produce a judgement of "equity" which either enhances or does not affect the degree of job satisfaction. Inequity, however, reduces satisfaction. While we do not doubt that this process occurs at the

Figure Caption

Figure 1. The relationship between performance and total and marginal utility.

Total and
Marginal Utility



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